

No. 845,433.

PATENTED FEB. 26, 1907.

A. PELTIER.
EXTENSION STEP LADDER.
APPLICATION FILED NOV. 14, 1906.

2 SHEETS—SHEET 1.

FIG. 1.

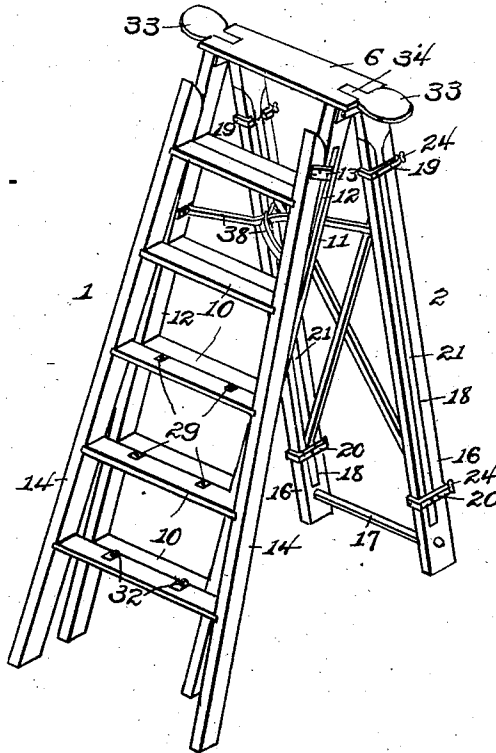
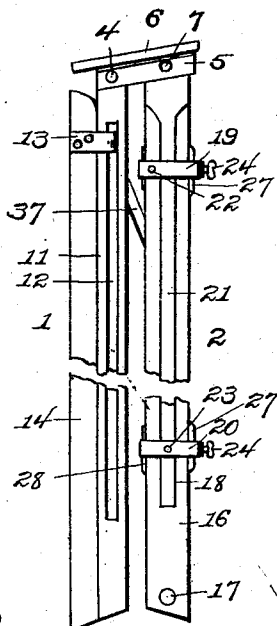


FIG. 2.



WITNESSES:

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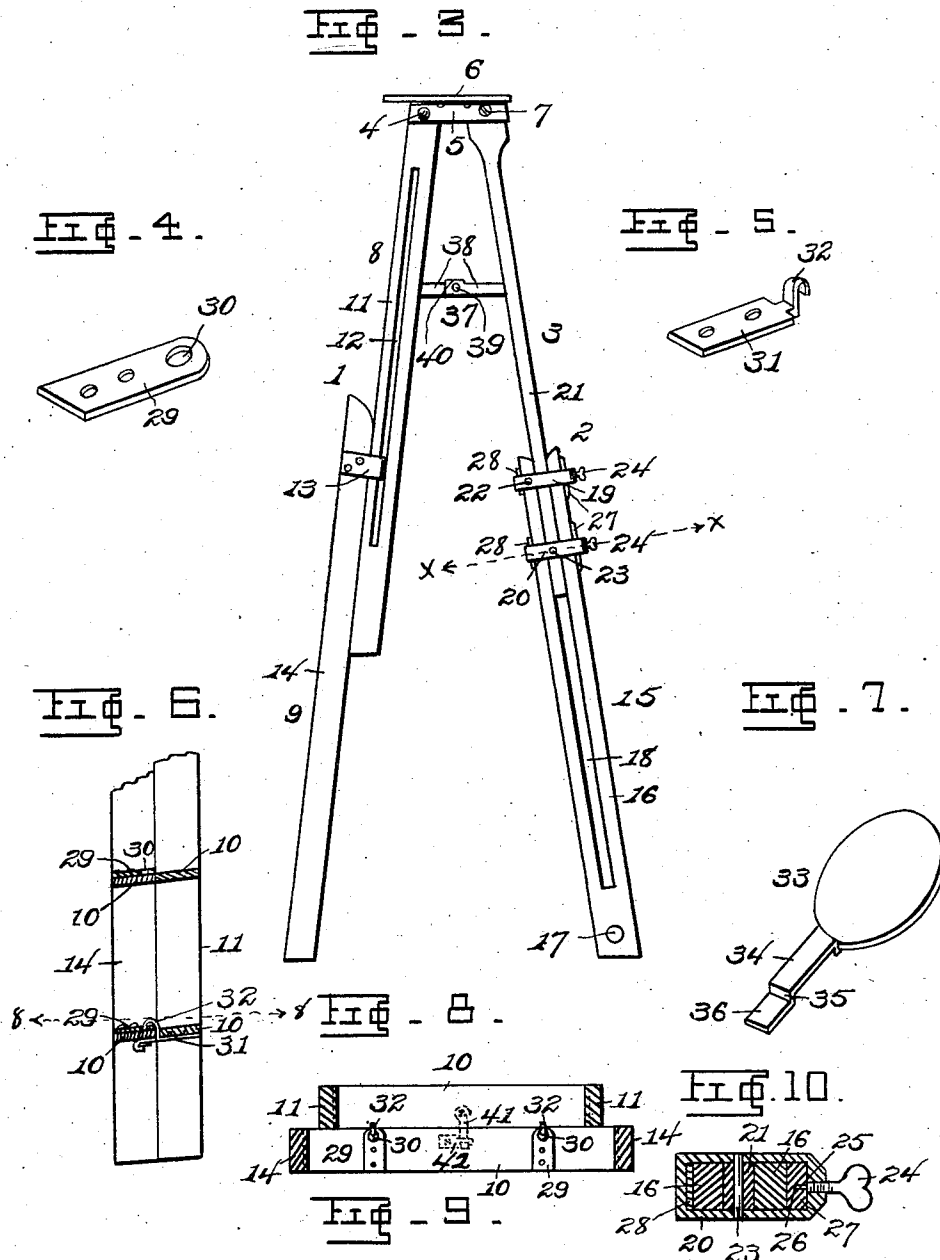
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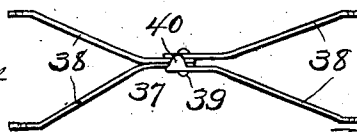
2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

ARTHUR PELTIER, OF DETROIT, MICHIGAN, ASSIGNOR OF SEVEN-SIXTEENTHS TO FRANK R. WHEAT, OF WHEELING, WEST VIRGINIA.

EXTENSION STEP-LADDER.

No. 845,433.

Specification of Letters Patent.

Patented Feb. 26, 1907.

Application filed November 14, 1906. Serial No. 343,324.

To all whom it may concern:

Be it known that I, ARTHUR PELTIER, a citizen of the United States of America, and a resident of Detroit, county of Wayne, and State of Michigan, have invented certain new and useful Improvements in Extension Step-Ladders, of which the following is a specification.

My invention relates to new and useful improvements in step-ladders, and more particularly to an extension step-ladder; and it has for its object to provide a simple, light, durable, and comparatively inexpensive ladder which may be readily adjusted to any desired height within certain limits:

A further object is to provide an extension step-ladder carrying means whereby it may be securely locked in any position to which it may be adjusted, thereby eliminating the danger of the parts slipping and giving a firm support for a person standing thereon.

In describing the invention in detail reference is herein had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a perspective view of the invention in lowered position. Fig. 2 is a side elevation showing the device folded. Fig. 3 is a side elevation of the invention set up and extended. Fig. 4 is a perspective view of an apertured plate. Fig. 5 is a similar view of a plate having a hook on its end for engagement with the apertured plate. Fig. 6 is a partial vertical section taken through the steps of the ladder. Fig. 7 is a perspective view of a supporting-bracket. Fig. 8 is a horizontal section on the line 8 8, Fig. 6. Fig. 9 is a top plan view of the spreading-brace detached from the ladder, and Fig. 10 is a section on the line $x x$, Fig. 3.

Referring to said drawings, in which like reference-numerals designate like parts throughout the several views, 1 indicates the ladder proper, and 2 the rear supporting-frame, the former being rigidly secured by means of bolts 4 to embracing-brackets 5, attached to the under side of the platform 6, while the latter is pivotally mounted upon a transverse rod 7, having its ends mounted in said brackets.

The ladder proper, 1, consists of two sections 8 and 9, which are slidable in relation to each other, as shown, each having the usual steps 10, the steps of one section being

adapted to coincide with those of the other, forming a wide and secure step when the sections are not extended and some of the steps of each coinciding at all times when adjusted to position whether the sections be extended or not. The section 8 is that which is rigidly attached to the bracket 5, carried on the under side of the platform 6, and in the outer face of each side rail 11 of the section 8 is provided a longitudinal groove 12, in which the hook-like end of a metal strip or strap 13, which is rigidly attached to the side rail 14 of the section 9, is adapted to slide in adjusting said sections to different positions in relation to each other. Said metal straps 13 further serve to bind the said sections 8 and 9 together, preventing the detachment of the latter from the former. The rear supporting-frame 2 likewise comprises two sections 3 and 15, slidable in relation to each other. The lower section 15 consists of wide side rails 16, connected near their lower ends by a transverse rod or bar 17. Said side rails are each provided with a longitudinal slot or channel 18, which extends from a suitable point above the lower end upward throughout the length of the side rail, as shown, and slidably mounted in said slots and held therein by metal bands or clamps 19 and 20 are the side rails 21 of the section 3. The clamp 19 is rigidly secured to the upper end of one member of the rail 16 by a pin or rivet 22, while the clamp 20 is rigidly secured by a pin or rivet 23 to the lower end of the side rail 21. Impinging set-screws 24 are provided in said clamps 19 and 20, by means of which the sections 3 and 15 may be secured in adjusted position; said set-screws 24 having reduced plain ends or points 25 engaging sockets 26, provided in metal plates 27. The plates 27 serve to prevent the set-screws from marring the rear edges of the side rails 16, and the plates carried by the clamps 20 further serve as slides whereby the said clamps 20 are caused when released to slide freely. Slide-plates 28 are also provided between the front edges of the side rails 16 and the clamps 20, said plates being preferably riveted to said clamps.

The section 9 is freely slidable with the hook-like end of the strap 13 in the groove 12 of the section 8. As means for interlocking said sections when adjusted two or more metal plates 29 are rigidly mounted on the

tops of the steps 10 in the section 9, each of said plates being provided with an aperture 30 in its rear end, and mounted on the under side of the lower step of the section 8 are a like number of plates 31, having hooks 32 formed on their front ends for engaging the apertures 30 in the plates 29. In moving the sections 8 and 9 in relation to each other the lower end of the section 9 is drawn outward to cause the steps thereof to avoid the hooks 32. When the hooks 32 are in engagement with the apertures 30, the greater the weight borne by the ladder the more securely are the sections interlocked.

Brackets 33 are provided for supporting pails or other articles in a position convenient to the top of the ladder, said brackets each consisting of a plate mounted upon a horizontal arm 34, which is bent to form a vertical portion 35 and a horizontal tenon 36 for insertion through a suitable slot provided therefor in the platform 6, said tenon being adapted for underlying the platform beyond the slot.

A brace 37 is provided for firmly holding the ladder 1 and the rear supporting-frame 2 when spread apart, said brace consisting of four curved sections 38, each of which is pivotally attached at its outer end to one of the four side rails of the stationary part of the device, and all connected at their inner ends to a common pin or pivot 39. One of said sections 38 has an integral horizontal lip or flange 40 on its inner end which overlies the ends of its companion sections, thus preventing the downward folding of said brace.

Pivotally attached to the under side of the lower step of the section 8 is a plate 41, having a hook-shaped end adapted for engaging an arm 42, attached to the under side of the lower step of the section 9 for preventing the sections from accidentally sliding one on the other when the ladder is lifted after being closed.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an extensible step-ladder, a ladder proper composed of two sections slidable in relation to each other, both of said sections provided with steps which are adapted to

coincide to form wide steps when adjusted with relation to each other, apertured plates mounted on the steps of the lower of said sections, plates mounted on the lower step of the upper section, hooks carried by the last-mentioned plates for engagement with the apertures in the first-mentioned plates, and a sectional rear supporting-frame having adjustable clamps for holding the sections of said supporting-frame in adjusted position.

2. In an extensible step-ladder, a ladder proper composed of two sections slidable in relation to each other, both of said sections provided with steps which are adapted to coincide to form wide steps when adjusted with relation to each other, apertured plates mounted on the steps of the lower of said sections, plates mounted on the lower step of the upper section, hooks carried by the last-mentioned plates for engagement with the apertures in the plates carried by the step which coincides with said lower step, a pivoted hook carried by the upper of said sections, an arm carried by the lower of said sections, said pivoted hook and arm being adapted for interlocking engagement, and an extensible rear supporting-frame.

3. In a step-ladder, a platform, brackets attached to the under side of said platform, a ladder proper comprising two sections 8 and 9, the section 8 being rigidly secured to said brackets and having longitudinal grooves in its side rails, and the section 9 being slidable upon said section 8, metal straps having hook-like ends in engagement with said grooves, means whereby said sections may be interlocked, a rear supporting-frame comprising two sections 3 and 15, the former pivoted at its upper end in said brackets and the latter slidable on the section 3, the side rails of the section 15 being longitudinally slotted and holding the side rails of the section 3 in the slots, and clamps for holding the sections 3 and 15 in adjusted position.

In testimony whereof I affix my signature in presence of two subscribing witnesses.

ARTHUR PELTIER.

Witnesses:

PETER J. LEBECK,
FREDK A. ECKERT.